APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/737,190	12/14/2000	Tetsuo Shibuya	14043 (JP919990270US1)	9159

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EXAMINER
LY, CHEYNE D

ART UNIT	PAPER NUMBER
1631	

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Advisory Action	Application No.	Applicant(s)
	09/737,190	SHIBUYA, TETSUO
	Examiner	**Art Unit**	
	Cheyne D Ly	1631	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 26 November 2003 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may <u>only</u> be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

<u>PERIOD FOR REPLY</u> [check either a) or b)]

a) ☒ The period for reply expires <u>3</u> months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2. ☒ The proposed amendment(s) will not be entered because:

    (a) ☒ they raise new issues that would require further consideration and/or search (see NOTE below);

    (b) ☐ they raise the issue of new matter (see Note below);

    (c) ☒ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

    (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

    NOTE: *See Continuation Sheet.*

3. ☐ Applicant's reply has overcome the following rejection(s): _____.

4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5. ☒ The a)☐ affidavit, b)☐ exhibit, or c)☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: *See Continuation Sheet.*

6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7. ☒ For purposes of Appeal, the proposed amendment(s) a)☒ will not be entered or b)☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

    The status of the claim(s) is (or will be) as follows:

    Claim(s) allowed: _____.

    Claim(s) objected to: _____.

    Claim(s) rejected: <u>2 and 12</u>.

    Claim(s) withdrawn from consideration: <u>1 and 3-11</u>.

8. ☐ The drawing correction filed on _____ is a)☐ approved or b)☐ disapproved by the Examiner.

9. ☐ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.

10. ☐ Other: _____.

Continuation of 2. NOTE: The introduction of limitations to steps a) and b) of claims 2 and 12 raises new issues that would required further consideration and/or search. More specifically, the added limitations require the manipulation of the first and second array raise new issues that would required further consideration and/or search because said limitations are different from that of "converting the target array into a first array" and the manipulation is directed to the target array" as presented in Listing of Claims, filed June 25, 2003. Therefore, the amendments to claims 2 and 12 have not been entered.

Continuation of 5. does NOT place the application in condition for allowance because:

CLAIM REJECTIONS - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

This rejection is maintained with respect to claims 2 and 12, as recited in the previous Office Action, mailed August 26, 2003..

Applicant's argument via amendment to claims 2 and 12 has been acknowledged and found to be unpersuasive because the said amendment does not help Applicant overcome the vague and indefinite issue of claims 2 and 12 as discussed below. Further, Applicant argues that an "array" is a term of art in the computer science that represents a set of elements in an ordered sequence. However, the instant invention is directed to analyzing the structure of mRNA or DNA sequence as directed to the field of biotechnology. It is well documented that the terms array and microarray have been used interchangeably to refer to set elements in an ordered sequence in the biotechnology art.

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Claim 2, line 1, and claim 12, line 1, the preamble recites a method for analyzing the structure of a target array while the body of the claim recites steps for changing a variable that is included in a target array. Claims 2 and 12 are vague and indefinite because it is unclear whether the target array, which is embodied in this method claim, is an apparatus such as a microarray, a data structure or the data representing the elements of the array apparatus. Clarification of the metes and bounds is required.

CLAIM REJECTIONS - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Jensen et al. (April 2000) taken with Eisen (1999).

This rejection is maintained with respect to claims 2 and 12, as recited in the previous Office Action, mailed August 26, 2003.

Applicant presents argument by amendment to claims 2 and 12, which has been fully considered and found to be unpersuasive as discussed below. The introduction of limitations to steps a) and b) of said claims raises new issues that would required further consideration and/or search. More specifically, the added limitations require the manipulation of the first and second array raise new issues that would required further consideration and/or search because said limitations are different from that of "converting the target array into a first array" and the manipulation is directed to the target array" as presented in Listing of Claims, filed June 25, 2003. Therefore, the amendments to claims 2 and 12 have not been entered.

Specific to Applicant's argument that the method of Jensen et al. "fails to teach or suggest the step of traversing the target array as in claims 2 and 12, Applicant's argument has been fully considered and found to be unpersuasive. Consistent with Applicant's definition of an array (Remarks, November 26, 2003, page 8, lines 20-23), Jensen et al. discloses a plurality of arrays as directed to DNA in Table 1 and arrays are traversed in an interative fashion (two sweeps) (page 328, column 1, lines 30-38).

Specific to Eisen, Applicant argues the disclosure of Eisen has no relevance to the method cited in claims 2 and 12 due to said disclosure being directed to DNA microarray. Applicant's argument has been fully considered and found to be unpersuasive due to the scope of claims 2 and 12 incudes DNA microarray. Further, claims 2 and 12 are vague and indefinite in regard to the limitation of array as discussed above.

It is re-iterated that Jensen et al. discloses a method for functional annotation associated with each gene or ORF was converted into a pseudo-sequence by removal of all non-alphanumeric characters...For each of the approximately 10 000 words in the dictionary, the set of 500 bp upstream regions was divided into a corresponding positive set consisting of the sequences containing the word in their functional annotation and negative set not containing the word (Page 327, column 2, lines 30-37 to Page 328, column 1, lines 1-3). "The two strands are treated separately when counting patterns. By doing so we gain sensitivity on patterns that show strong preference for one orientation" (Page 327, column 1, lines 43-47). "In the first sweep, the number of sequences containing each pattern is stored in one counter. During the second sweep, the number of these sequences yet encountered and the highest value of $|Nx1 - ni|$ so are stored in two other counters" (Page 328, column 1, lines 33-37). Table 3 (Page 330) discloses the converted data from three microarray experiments and the array data is analyzed respective of each other, as in instant claims 2 and 12.
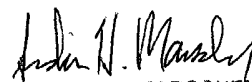
However, Jensen et al. does not specify a method for analyzing the structure of an array.

Eisen discloses a method for analyzing the structure a DNA array and the location of each DNA target contain within an array via a GRIDDING process (page 4, lines 9-31). After "gridding" the first array from a batch, it is generally possible to use this initial grid for all subsequent arrays in the batch (page 20, lines 6-9), as in claims 2 and 12.
7.

It is noted that Jensen et al. discloses a general method for analyzing large amount of data generated from DNA arrays (abstract etc.), thus, suggests that the method of Jensen could be applied to any DNA array data of which Eisen is a specific array analysis that is therefore suggested within the generic Jensen et al. description.

Eisen discloses a method for analyzing the structure and the location of each DNA target contain within an array via a GRIDDING process (page 4, lines 9-31). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to use the method of analyzing the structure of a DNA array as taught by Jensen et al. and Eisen.

ARDIN H. MARSCHEL
PRIMARY EXAMINER